

REMARKS

Claims 1-16 and 18-23 are pending in the application.

Claims 1, 18 and 19 are amended herein. Support is found, for example, in the original claims and at page 6, lines 23-27. No new matter is presented.

I. Response to Claim Rejections - 35 U.S.C. § 112

1. Claims 1-16 and 18-23 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement.

According to the Examiner, the recitation that the thermosetting/thermoplastic hydrophobic polymer is chemically bonded with the modified fiber is not supported by the specification.

Without conceding the merits of the rejection, claim 1 is amended herein to recite contacting the fibre material with the hydrophobic polymer under conditions allowing for intimate contacting between the modified fibre and the polymer to form the composite, thereby obviating the rejection.

2. Claims 18 and 19 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Without conceding the merits of the rejection, claims 18 and 19 are amended herein to further clarify the claimed invention, thereby obviating the rejection.

Accordingly, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 112.

II. Claim Rejections - 35 U.S.C. § 102

Claims 1-3, 5-8, 11, 18-20, and 22-23 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by, “A review on Interface Modification and Characterization of Natural Fiber Reinforced Plastic Composites” by George et al., hereinafter “George”.

Applicants traverse the rejection.

George reviews different methods including chemical ones to modify fibres to improve their compatibility with polymers. All the chemical methods presented aim at chemical grafting and polymerization of a monomeric or oligomeric component to hydroxyl groups (-OH) of cellulose in fibres and chemical bonding through this component to polymer.

The approach taught by George differs profoundly from the presently claimed invention where the target structure in the fibres is *a phenolic hydroxyl group present only in lignin* in lignin-containing fibres. The claimed invention also aims at retaining the fibre properties including cellulose in intact form, whereas the chemical methods described in George tend to more or less depolymerize cellulose.

As noted above, the method described in the present application is specific and targets in grafting of phenol functional monomers containing alkyl chains to fibers with residual lignin. Increased compatibility of fiber generated by the method in the present application with a plastic matrix is due to the physical interactions including improved physical interaction or, compatibility, between fibres containing phenol functional monomers with alkyl chains with hydrophobic or crystalline regions of polymer and better fiber dispersing in plastic melt due to decreased fibre-fibre interaction by modification. Thus, the present invention is different and is not anticipated by George et al.

Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 102.

III. Response to Claim Rejections - 35 U.S.C. § 103

Claim 4 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over “A review on Interface Modification and Characterization of Natural Fiber Reinforced Plastic Composites” by George.

Applicants respectfully traverse the rejection.

George refers to chemical reactions that are carried out in organic solvents. According to the present invention, treatments of fiber are made in an aqueous fiber dispersion by using very mild reaction conditions without affecting cellulose part of fiber. Thus, the fibre suspensions referred in George and in the present application are not the same and there is no apparent reason to modify the disclosure of George with a reasonable expectation of success.

Accordingly the present invention is not rendered obvious and withdrawal of the rejection is respectfully requested.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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